# Atari Computer Enthusiasts (N.S.W.)
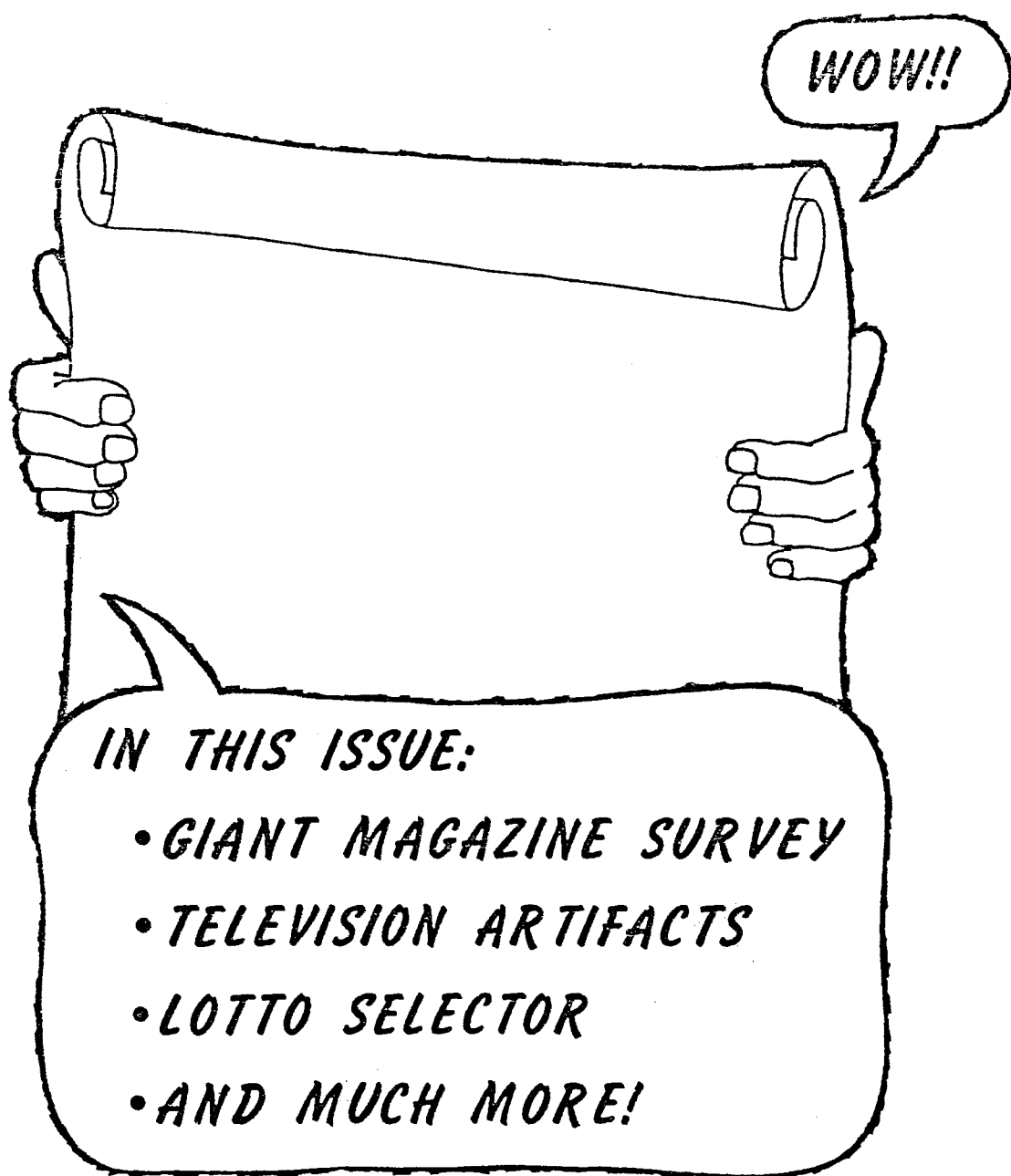
# ATARI COMPUTER ENTHUSIASTS (N.S.W.)

Atari Computer Enthusiasts (N.S.W.) is a branch of the Atari Computer Enthusiasts, an independant, non-profit users' group based in the U.S.A., but with membership world-wide. We have no connections with ATARI, Inc. or their Australian distributors, Futuretronics Australia Pty Ltd.

Our aims include promotion of the ATARI 400/800 Home Computer System; the interchange of hints, tips & ideas amongst members; instruction in programming techniques for beginners to advanced users & to generally enjoy ourselves.

Meetings are held at 6.0 P.M. sharp on the first Monday of every month (or the second Monday if it clashes with a public holiday) at the offices of:

    I.P. Sharp Associates
    8th Floor
    Carlton Centre,
    55 Elizabeth Street, Sydney
    (between King Street & Martin Place)

Membership is $15 joining fee & $15 annual subscription (discounted to $10 joining fee & $10 annual subscription for students under 18 & still at school).

Any mail, subscriptions or postal enquiries are to be directed to:
Atari Computer Enthusiasts (N.S.W.)
c/o Paul Phillips
78 Ayres Road,
St. Ives, N.S.W.    2075
Phone enquiries: 789-1397 (A.H. Garry Francis)
449-6286 (A.H. Paul Phillips)

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# MEETING DATES FOR 1982

  7th June
  5th July
  2nd August (yes this is bank holiday but the meeting is on)
  6th September
11th October (due to Eight-Hour Day Holiday)
  1st November (A.G.M. & election of new committee)
  6th December

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# EDITORIAL

"Let's have a newsletter", we all said at the March meeting, it's obvious that a user group such as ours needs one". At the April meeting some volunteers emerged but then ... nothing. So at the May meeting where the name A.C.E.(NSW) came into being the action started - and it has now produced this first issue.

I have done the first step of the editing process for this issue by taking the "raw text" of the contributions and "processing" it into the printed form that you see. I have used some word-processing software on a UNIX system and have printed it on a Sander's Media 12/7 printer (a matrix dot printer - would you believe). Garry Francis then took this "processed" text and arranged the layout and added the front page and headings. As you can see the system works quite well so the preferred method for preparing contributions for "Inside Info" will be to type it in on your Atari. However, good printed copy can also be used.

When we started work on this issue I had hoped we could aim for a monthly - but was disappointed to find that the membership list was so short that we do not yet have a large enough income to support a monthly. I expect the group to grow rapidly and before long we may be able to reconsider the bi-monthly decision.

The "Odds & Sods" column by Garry Francis will become a regular feature, and if you have any hints etc that seem to fit in that column you can contact him directly. Otherwise, if you want to contribute an article, review, program or whatever - you can contact me for more details of how to prepare it.

<div align="right">

- Ron Baxter
(812388 H, 4676059 W)

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* * *

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*"According to my calculations, it should hit the Earth in .00298 seconds."*

# MAGAZINE SURVEY

## by Garry Francis

A lot of people have asked the question "How can I find out more about the ATARI?". The answer is simple:
- Beg, borrow or buy every scrap of information you can possibly lay your hands on. In the early days, very little information was available, but there is now a multitude of books, magazines & technical manuals available...at a price.
- Read it all.
- Read it all again.
- Everytime you discover something new, sit down at your keyboard & try it!
- Join an ATARI Users' Group (A.C.E.(N.S.W.) of course).

As a start in the right direction, this article presents a thorough survey of all the American magazines (that I'm aware of) that have given space to the ATARI. The opinions expressed are entirely mine. I have tried to be frank & honest, but someone will surely disagree with some of my comments. Many of the magazines are available through larger newsagents or computer stores. If your local supplier doesn't have the magazine you want, then pester him to get it in.

At present, the best magazines (see summary) are only available by subscribing direct to the publisher overseas. Therefore, I have included addresses & subscription rates (in U.S. dollars) as at the time of writing, but these may change without notice. It is strongly recommended that you contact the publisher for up to date details before sending any money. If you don't & something goes wrong, then don't come crying on my shoulder. For those of you who have never bought anything by mail from overseas before, it is simply a matter of asking for an International Draft at your local bank. Depending on the bank, you will probably be asked to fill in a form giving the name & address of the magazine publisher & the amount (U.S. dollars) for the cheque. They will convert this into Australian currency, charge you about $2.00 commission & write you a cheque in U.S. currency drawn on a U.S. bank. Post this cheque with your subscription & wait patiently, as it may take quite awhile for your subscription to be processed. As a guide, you can expect magazines to arrive about 3 months after the cover date if being sent by surface mail or about 2 weeks by air mail. Air mail is quick, but it is very, very expensive.

## A.N.A.L.O.G.

A.N.A.L.O.G. is apparently an acronym for ATARI Newsletter And Lots Of Games. It was the first magazine devoted entirely to the ATARI & covers a broad range of material, but mainly games & utilities. Articles are usually short & concise & the 6 or so program listings per issue would appeal to the personal user. A.N.A.L.O.G. also has a lot of in depth software reviews. It is a very sensibly produced magazine with no colour or glossy pages. Recommended for the average user.

SUBSRIPTIONS: 6 issues per year, $20.00 surface mail, $48.00 air mail.
A.N.A.L.O.G. 400/800 Magazine
P.O. Box 23,
Worcester, MA 01611
U.S.A.

## ANTIC

ANTIC is the name of the large scale integrated (LSI) circuit responsible for all ATARI's super duper feats of video wizardry that other microcomputers can't even come close to. It is also the name of a new magazine devoted entirely to the ATARI. ANTIC magazine is small, but filled with a wide range of articles. For example, the April 1982 introductory issue had a zero page memory map, an assembly language keyboard mask, an introduction to PILOT & a discussion of multi-tasking in FORTH. This issue is worth the price for Chicken alone! (In case you haven't seen it, Chicken is an arcade-style game written in BASIC by Stan Ockers. It first appeared in the A.C.E. Newsletter & was demonstrated briefly at our 2nd meeting.)

I recommend buying this issue, even if only to support a new ATARI magazine. I'll be watching with interest to see how ANTIC develops.

SUBSCRIPTIONS: 6 issues per year, overseas subscription rates not known ($2.50 cover price).

ANTIC Publishing
297 Missouri Street,
San Francisco, CA 94107
U.S.A.

## ATARI COMPUTER ENTHUSIASTS NEWSLETTER

The A.C.E. Newsletter was started by editor Mike Dunn about 3 years ago. It is a small 12 to 16 page newsletter with NO ADVERTISING! It is chock full of goodies, a lot of which is tutorial in nature, & averages about 3 program listings per issue. Stan Ockers (author of Chicken & Doggies) does a program every issue & Marc Benioff (of Crystalware fame) tempts us with rumours like you wouldn't believe!! These rumours nearly always become fact, so if you want to know what's available for the ATARI 6 months before everybody else, then subscribe to this newsletter. Subscriptions may sound expensive, but it's better value for money than any commercially available magazine. Subscription also makes you a member of A.C.E., which allows you to buy cheap software from their Exchange Library.

SUBSCRIPTIONS: 10-12 issues per year, $20.00 air mail, surface mail rates not known.

ATARI Computer Enthusiasts
3662 Vine Maple Drive,
Eugene, OR 97405
U.S.A.

## THE ATARI CONNECTION

This is the in-house journal which ATARI sends free to all ATARI personal computer owners in North America, if they've returned their warranty registration card. It's a high quality glossy publication with lots of colour & is obviously biased, but who cares? As well as new release & general interest articles, it has regular columns on entertainment, "Computer Talk" & stuff for kids - usually with short program listings. Especially recommended for beginners, but you may have trouble finding a copy. Write to Futuretronics & ask why it isn't distributed free like in North America.

SUBSCRIPTIONS: 4 issues per year, subscription rates not known ($3.00 cover price).

## BYTE

In magazine terms, BYTE is the small computer industry "heavy". It's audience is the technically-minded, the hardware "nuts" & those into the weird & obscure side of personal computers, particularly languages such as FLOPTRAN IV, GRAPL, SNOBOL, MUMPS & others...don't laugh, these are all genuine programming languages!

BYTE is a huge magazine, but unfortunately 98% of its content is advertising. Nevertheless it is a good magazine & I must particularly recommend getting every issue from September 1981 to April 1982 for the 8-part series "The ATARI Tutorial". It is the serialised form of the book "De Re ATARI". This book was originally prepared by the Software Development Support Group of ATARI as a training manual for professional programmers. It has now been jazzed up & released to the general public through the ATARI Program Exchange. It's authors include such dignatories as Chris Crawford (who wrote Eastern Front, Scram & Energy Czar) & Mike Ekburg (who was heavily involved with the Operating System & DOS).

Another article you should search out is "An Introduction to ATARI Graphics" by Chris Crawford & Lane Winner in the January 1981 issue. All of this is great stuff for intermediate to advanced programmers. If you're a beginner, you can read BYTE on the train to impress people that don't know any better!

SUBSCRIPTIONS: 12 issues per year, $35.00 surface mail, air mail rates not known.

## COMPUTE !

COMPUTE! is an absolute must for any ATARI owner wanting to know more about his machine. I cannot report too highly of this magazine. It supports only 6502 based computers, namely Apple, ATARI, Ohio Scientific, Commodore PET & more recently the Commodore VIC. Up until February 1982, each system had it's own "Gazette" which made things very easy to find. Unfortunately, this format has now been dropped.

COMPUTE! covers a broad range of topics from home applications & education to the occasional game, but the main emphasis is on articles that I would consider "instructional". For example, redefining character sets, player-missile graphics, adding an audio track to cassettes, input/output (I/O) techniques, creating cassette boot tapes, writing text in graphics modes, using strings for graphics storage, simulating

string arrays & dozens of utility programs. Bill Wilkinson of Optimised Systems Software, Inc. writes a regular column called "Insight:ATARI" for advanced programmers. And who could be better qualified to write such a column? O.S.S. actually wrote ATARI BASIC! COMPUTE!'s articles cover the beginner that has passed the teething stage to the super advanced (anyone telling you he's in this category is a liar). There are lots of program listings, usually in BASIC, but a few in assembly language. Back issues are available from January 1981 & many articles have been reproduced in "COMPUTE!'s First Book of ATARI".

SUBSCRIPTIONS: 12 issues per year, $25.00 surface mail, $88.00 air mail.
COMPUTE!
P.O. Box 5406,
Greensboro,  NC 27403
U.S.A.

CREATIVE COMPUTING
Creative Computing is probably the oldest mass market personal computer magazine available. You will usually find an article or two on the ATARI, but even if you don't, you can get a lot of benefit from the other stuff. Creative Computing is non-technical & has lots of short articles, especially on education, graphics & music. It is also well known for it's games, but they will have to be translated from other dialects of BASIC. The Publisher/Editor-in- Chief is David Ahl, who also published the classic books "BASIC Computer Games" & "More BASIC Computer Games".

Creative Computing runs a regular column called "Outpost:ATARI". It was the only column of it's kind in the early days when George Blank (now Editorial Director) gradually revealed the inner secrets of the ATARI's hardware. It is now handled by David & Sandy Small & is highly recommended for intermediate programmers wishing to learn how the ATARI does all those neat tricks. But be warned...Outpost:ATARI's program listings have always been full of minor bugs to keep you on your toes.

Another column of particular interest is David Levy's "Intelligent Computer Games". If you've ever considered writing a program to play a brain game like chess, reversi, go, bridge, poker, etc., then this is the place to start.

SUBSCRIPTIONS: 12 issues per year, $29.00 surface mail, $50.00 air mail.
Creative Computing
P.O. Box 789-M,
Morristown,  NJ 07960
U.S.A.

INTERFACE AGE
This magazine is becoming more & more oriented towards business applications & you know what that means. B-O-R-I-N-G. Never has so much been written by so many & said so little! There is rarely anything of interest to ATARI users nowadays, but if you can get your hands on the March to August 1981 issues, you may wish to check out the series on "Sounds of the ATARI...in BASIC". It may be useful to anyone who has never used the SOUND command, but it could have been compacted into one article. Overall, Interface Age is not recommended.

SUBSCRIPTIONS: 12 issues per year, $35.00 surface mail, air mail rates not known.

Interface Age
16704 Marquardt Avenue,
Cerritos, CA 90701
U.S.A.


## KILOBAUD MICROCOMPUTING

This used to be an informative magazine, but it suffers from not having a specific audience. It tries to cover everything for everybody, but it just doesn't work! Once in a blue moon it has an article for the ATARI (for example, the August 1981 issue had an ATARI disassembler written in BASIC), but who wants to pay $4.50 for one article? Kilobaud Microcomputing would also be second in the race for the most advertisements. Not recommended. (Note that "Kilobaud" was recently dropped from the magazine's title.)

SUBSCRIPTIONS: 12 issues per year, $35.00 surface mail, $62.00 air mail.

Microcomputing
Subscription Dept.,
P.O. Box 997,
Farmingdale, NY 11737
U.S.A.


## MICRO

MICRO is subtitled "The 6502/6809 Journal", but the poor old ATARI doesn't usually get a very good coverage. If you're lucky you'll get one article per month. However, if it's any consolation, MICRO contains a regular column called "From Here To ATARI". It's written by James Capparell (Editor & Publisher of the newly released ANTIC magazine) & if longer, would alone be worth the price of the magazine. Very good stuff for advanced programmers. Overall, MICRO seems to orient itself towards hardware interests rather than software, but recommended when running ATARI articles.

SUBSCRIPTIONS: 12 issues per year, $27.00 surface mail, $72.00 air mail.

MICRO
P.O. Box 6502,
Chelmsford, MA 01824
U.S.A.


## POPULAR COMPUTING

Some time ago, McGraw-Hill (publishers of BYTE) saw the need for a non-technical magazine to satisfy the booming personal computer industry. So out they came with a quarterly magazine called "onComputing" (that's their spelling not mine). After a short time, onComputing could no longer accomodate the growing demand, so in November 1981 it was replaced with a new monthly magazine called POPULAR COMPUTING. In my humble opinion, it was a wasted effort. POPULAR COMPUTING is the sort of magazine you would buy when looking for your first computer. Once you've bought that first computer, the magazine has little of interest. It contains a lot of those articles that take up a lot of room but don't say anything. This is unfortunate, as it is very well produced. There is very little of interest to ATARI users apart from a comparative

review of the big four in the January 1982 issue.  This told us nothing
that we don't already know, mainly that the ATARI "...outshines all the
other major competitors...".  Recommended for doctors & barbers looking
for a new magazine to replace the Womens Weekly's in the waiting room.
SUBSCRIPTIONS: 12 issues per year, $21.00 surface mail, air mail rates
not known.

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Popular Computing<br>
P.O. Box 590,<br>
Martinsville,  NJ 08836<br>
U.S.A.
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## PURSER'S MAGAZINE

Purser's Magazine is a totally different concept to any of the other
magazines.  It is a budget priced guide to available software.  The
first special ATARI edition was printed on newspaper & released in the
middle of 1981.  It had reviews of nearly every item of ATARI software
available at the time - about 44 items in total.  Each review included
photos of the packaging & typical screen displays - very useful for any-
one considering buying software unseen from overseas.

Purser's ATARI Magazine #2 was released at the end of 1981.  It was
slightly better quality, but consisted almost solely of reader's com-
ments under the categories "Of all the programs you have purchased,
which do you use the most?  Why?" and "Of all the programs you have pur-
chased, which was the worst? Why?".  Both issues have a very comprehen-
sive & invaluable software directory.  The third issue should be avail-
able shortly.
SUBSCRIPTIONS: Regular subscriptions are not yet available.  (Issue #1
cover price $1.00.  Issue #2 cover price $2.00.)

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Purser's Magazine<br>
P.O. Box 466,<br>
El Dorado,  CA 95623<br>
U.S.A.
</div>

## RECREATIONAL COMPUTING

I haven't seen this magazine around for a long time.  It may not even
exist anymore.  It used to be strongly oriented towards games & educa-
tion & had a couple of articles on the ATARI, although I never found it
very useful.  Perhaps someone could enlighten us as to it's current
status.  The following information is 12 months old, so use with cau-
tion.
SUBSCRIPTIONS: 6 issues per year, $26.00 air mail, surface mail rates
not known.

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Recreational Computing<br>
P.O. Box E,<br>
Menlo Park,  CA 94025<br>
U.S.A.
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## SOFTSIDE

Regardless of what purpose you had in mind when you bought your ATARI,
you would be mad to deny the attraction of computer games! And games are
the specialty of SoftSide Magazine.  SoftSide started life way back in
1978 as a cheap quality, pocket size magazine for TRS-80 owners.  The
publishers soon diversified & began producing PROG/80 (also for TRS-
80's) & the SoftSide Apple Edition.  Then in August 1980, the 3 maga-
zines were combined, a new format adopted & (joy of joys) it began to

cover the ATARI. Ever since that first momentous issue, SoftSide has been a rare source of ready to run programs for ATARI users. You can usually expect 3 fairly bug free program listings per issue. These are mostly games or simulations. Recent issues have had versions of Space Invaders, Defender, Hexapawn, Adventure games, a character editor & a music editor - all written in BASIC! They have also had 2 excellent programs for more serious applications, namely a very "friendly" database management system & a simple word processor called Microtext. Regular authors include such famous names as Scott Adams (of Adventure International), Lance Micklus (of Star Trek in particular), Mark Pelczarski, Alan Zett & others. Highly recommended to anybody who wants to have fun with their computer. I believe all back issues are available except September 1980, August 1981 & September 1981.

SoftSide also offers subscriptions to a Cassette Version (CV) & Disc Version (DV), which means you get the magazine PLUS a cassette or disc containing all the programs for your computer f from that issue. An enhanced Disc Version is available from November 1981, which means you get an extra program not included in the magazine.

If you're into Adventure games, then there's just one more item I must mention. SoftSide has an "Adventure of the Month Club" which brings you an original Adventure game on disc or cassette each month for 6 months. The programs are written in BASIC, but the 3 I've got have very fast response times & are highly entertaining. Past Adventures have covered subjects as diverse as an Arabian Adventure, Alien, Treasure Island, Jack the Ripper, Around the World in 80 Days,The Black Hole, Klondike Adventure, Witches' Brew Adventure & more. At an average of $7.00 per cassette, you can't go wrong!
SUBSCRIPTIONS: 12 issues per year, surface mail rates not known.
Magazine only: $62.00 Air mail
Cassette Version: $125.00 Air mail
Disc Version: $175.00 Air mail
Adventure of the Month (cassette 6 months): $41.00
Adventure of the Month (Disc 6 months): $61.00
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SoftSide Publications<br>
6 South Street,<br>
Milford, NH 03055<br>
U.S.A.
</div>

SUMMARY
Well, after all that guff, what would I recommend? Different magazines appeal to different people, but lets assume:
- you want lots of articles on the ATARI
- you want program listings that work & don't require a degree in cryptology
- you want material you can learn from
- most importantly, you want value for money.
Number one on my list is a tie between 2 magazines, SoftSide if you're into games and COMPUTE! for more serious applications. Runners up are A.C.E. Newsletter, A.N.A.L.O.G., Creative Computing & ANTIC roughly in that order. In a future issue, we may do a survey of all ATARI books if there is enough interest. In the meantime, comments & amendments to this survey, or news of magazines not covered would be most welcome.

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# Odds & Sods

A regular column by Garry Francis

FOOLS GO WHERE ANGELS FEAR TO TREAD

Nobody in their right mind would attempt to produce a club newsletter for a small membership & on a limited budget. But we went ahead & did it anyway! This first issue of INSIDE INFO is the work of only a few people, but this cannot continue for very long.

We are asking for your support. Our newsletter cannot survive unless we recieve lots of contributions from all our members. If every member submitted only 1 article or program listing per year, there would be sufficient material to sustain a regular newsletter. I don't think I need to tell you what to write. After all, YOU know what YOU'D want to read in a newsletter! So get your brain into gear & put pen to paper (or fingers to the keyboard). DON'T leave it to the other guy to do all the work. If we recieve articles, there will be an INSIDE INFO No. 2. If we don't, then forget it!!

SUPER-DUPER CONTEST

Everybody loves a contest, so to herald the first issue of INSIDE INFO, we hereby announce our very own little contest. The author of the best article(s) submitted to INSIDE INFO this year will win a super-duper prize. Just to keep you in suspense, we will not reveal what the prize is ('cause we don't know ourselves yet), but it will be something along the lines of a block of flats on the Sunshine Coast, a world trip with unlimited spending money, a custom built Ferrari or maybe something for your ATARI computer! So get those newsletter contributions rolling in.

TV SWITCHBOX

Upon first examining the contents of the box containing your new ATARI computer, you would no doubt have noticed that the TV switchbox illustrated in the Operator's Manual was not supplied. A similar situation exists with the ATARI Video Computer System (VCS), but in this case a note from Futuretronics is enclosed to explain why. For your interest, an extract from this note is given below:

"Dear Customer,
    Please note, a switchbox is not included with your ATARI as illustrated in the manual provided. The reason being that we have 'specially produced' an easier method of attaching your ATARI directly to your 75 ohm VHF antenna connection. Simply, when wishing to use your ATARI, if you have a round antenna cable, disconnect this from your television and connect the ATARI lead directly. Unplug ATARI and plug in antenna cable when wishing to use your television normally."

Personally, I'd rather have a TV switchbox.

## WARRANTY CARDS

It is important that you return your warranty card to Futuretronics, as this is the only record they have of who has bought an ATARI computer. In North America, ATARI sends registered owners all sorts of neat stuff, like "The ATARI Connection", ATARI Program Exchange catalogue and so on. Futuretronics presently uses this system to send an irregular bulletin to VCS owners. If they ever get their act together, then they may do the same thing for home computer owners, but you will miss out if you haven't returned your warranty card.

## UPGRADING ATARI 400

If you wish to upgrade your ATARI 400 with a 32k RAMCRAM, be warned that there is more to this operation than meets the eye. I can't tell you what it entails, but unless you want your machine to "blow up" at some time in the future (no doubt after the warranty has expired), get it done properly. At present, there is only one place with the "know-how" to carry out this upgrade and that is Futuretronics. Their address is 738 Botany Road, Mascot. (Phone 693-1144.) I believe this service is free, but they will keep your old 16k board as compensation to use as spare parts.

## GTIA CHIP

Through ATARI's experience with the advanced video techniques of arcade games, they were able to design a couple of custom chips to provide the ATARI Home Computer System with feats of video wizardry previously unheard of in the personal computer world. However, it seems that when the computer was due to be released, they hadn't quite gotten all the bugs out of one of these chips (called the GTIA), so they used a stand-in called CTIA. Before the computer could be released in Australia & Europe, the CTIA would have had to be redesigned to suit the PAL system, so why not just redesign the better GTIA? That's exactly what they did. All ATARI computers released in Australia have the GTIA chip installed! This is indicated by a "G" stamp beside the serial number. The only advantage of the GTIA chip over the CTIA chip is that you have an extra 3 graphics modes to play with (i.e. GRAPHICS 9,10 and 11). These will be fully explained in a future issue. In the meantime, see "De Re ATARI" or the new ATARI column in the April 1982 issue of "Your Computer".

## IMPROVEMENTS TO DISC DRIVE

The newer disc drives have a couple of modifications which should help improve their performance. These are a data separator board & a "C" Fast Format ROM chip. If you bought a disc drive recently, then check the packing carton. Somewhere near the serial number there may be a yellow sticker with the letters "DS". This indicates the inclusion of the data separator board. A blue sticker with the letter "C" indicates the inclusion of the "C" Fast Format ROM chip. You should also have DOS 2, which has vast improvements over the old DOS. If you don't have DOS 2, then race out & buy it!

## HANDY HINT

If you get irritated by the constant BEEP, BEEP, BEEP of a cassette program being saved or loaded (particularly long cassettes, like a Scott Adams Adventure), then try this neat trick. After the operation is under way, turn the TV volume down & press any key on the keyboard (except the BREAK key of course). The key will not affect your save or load operation, but will be saved in the keyboard buffer. When the operation is complete, you will be signalled by a "click" from the keyboard speaker. Neat, eh? Alternatively, if you are hard of hearing or you are some distance away from the computer, then press CTRL-2 instead of just any key. This will cause a far more audible "buzz" from the speaker when the save or load operation is complete.

## USING ASSEMBLER CARTRIDGE AS A TEXT EDITOR

When we started producing this first newsletter, we were confronted by one major problem. None of us had a word processing program or a printer. However, necessity breeds innovation & we soon came up with a novel & simple text editor using the Assembler Editor cartridge. To use it, boot your system as usual, but with the Assembler Editor cartridge inserted. Type 'BUG' to enter DEBUG mode, then set the left margin by typing 'C52<LM', where LM is the hexadecimal value of the left margin. This may be calculated using the following formula:

$$LM = A - (B + C + D) / 3$$

LM = left margin in decimal...this may have to be rounded up and must then be converted to hexadecimal
A = maximum number of columns across the screen, i.e. 40
B = maximum number of characters per line of text in final printout
C = number of digits per line number, e.g. for a line number in the hundreds, C = 3
D = number of trailing blanks after the buzzer warns you that you're near the end of the logical line, i.e. 7

Type 'X' to return to EDIT mode, then use 'NUM' command to commence auto line numbering. You may then start typing your text. The buzzer will sound whenever you reach the end of a line. If you were in the middle of a word, then backspace over it, press RETURN and continue on the next line. When finished entering all your text, press RETURN on a blank line. You may then list, add, delete or edit lines just as though it were source code. It may also be stored to disc using 'LIST#D:FILENAME.EXT' or to cassette using 'LIST#C:' or it may be printed out without line numbers using 'PRINT#P:'. Each line printed out this way will have 1 leading blank. There are just 2 "bugs" in this method that I'm aware of. Firstly, you can not have a blank line imbedded in your text & secondly, if you use the cursor control keys while in the auto line numbering mode, then for some reason the line number is repeated as part of your text. Overall, this technique works remarkably well & may save you having to spend $100 for a fancy word processor with features you don't need.

## DOES CLOAD GIVE YOU TROUBLE ?

Everybody has probably experienced one of those frustrating moments where a recently saved program will not load back using CLOAD. Yet perhaps not everyone has noticed the hint given near the bottom of page 24 in the BASIC Manual. It advises you to do a LPRINT before a CSAVE. Now, if you assumed that because you don't have a printer you should ignore this, then you like me, missed the point. You type LPRINT, let it complain at you with an error, then do your CSAVE with confidence. Try it.

## NEXT ISSUE

I will probably make this a regular column. There are dozens of itty bits that are worth discussing, but don't warrant their own article. We can squeeze in all sorts of hints & tips & maybe some juicy rumours as well. It is also the most appropriate place to answer members' questions, so if there's anything in particular you'd like to know about, drop me a line. If I can't answer your question, I'll find someone that can. In the next issue, we might take a look at what makes the ATARI tick & the differences between the PAL & NTSC versions. Bye 'til then.

−Garry Francis

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# USING TELEVISION ARTIFACTS
# FOR EXTRA COLOURS

by Brenton Vettoretti

This month we are going to look at how to get multiple colors out of a single color graphics mode by using television artifacts. The single color modes available through BASIC are mode 0 and mode 8. They are stated as having one color and two luminances. By using artifacts you can display points with four different colors.

Now for some technical stuff. Your television operates on a principle called <u>Raster Scan Display</u>. An electron beam is generated at the back of the picture tube and is attracted to the front. About half way the beam passes through a set of horizontal and vertical deflection coils which, if energised, can redirect the beam to any point on the screen. The beam's intensity can also be varied, and this changes the brightness of the dot on the screen. The electronics in the television control the horizontal and vertical deflection coils. The coils start the beam in the top left corner of the screen, and sweep it horizontally across the screen. Whilst the beam is sweeping the screen, its intensity is changed and it will draw an image on the screen. When it reaches the right edge of the screen, the beam is switched off and brought back to the left edge, as well as being moved down a notch. Then the beam is switched on again and it starts to sweep over to the right edge again. This is repeated 312 times. When the beam reaches the bottom right corner of the screen it is turned off, and zig-zags to the top left corner where the cycle starts over. This whole cycle occurs fifty times a second.

A single sweep of the beam is called a "<u>horizontal scan line</u>". When aligning televisions it is common practice to "bend" the picture over the edges of the screen, this stops an ugly black border appearing around the picture. This would normally make the television unsuitable for use as a computer screen, as important information would be lost, or "over the edge". The Atari computer overcomes this problem by limiting its display to 192 of the 312 horizontal scan lines, thereby enabling a 192 pixel vertical resolution. The unit of horizontal distance is the "color clock". You specify the width of an image by stating how many color clocks wide it is. There are 228 color clocks in a single horizontal scan line, but only 176 are actually visible. This gives a full color maximum resolution of 176 horizontal pixels. It is possible for the Atari computer to control individual half-clocks, which gives a horizontal resolution of 352 pixels. This produces color artifacts which we will now discuss.

The term <u>TV artifact</u> refers to a pixel on the screen that shows a different color than the one assigned to it. The two major components of a TV signal are luminance and color. The luminance signal is the most important of the two, as it not only holds the luminance information for the beam, but also carries the horizontal and vertical sync pulses. The color information signal is mixed with the luminance signal. The brightness or luminance of a pixel on the screen is directly related to the amplitude of the luminance signal. The higher the amplitude of the signal the brighter the pixel. The color information is based on a <u>phase shifting</u> signal. The term "color clock" refers to one color cycle. The Atari graphics mode 8 varies the amplitude of the luminance signal twice per color clock. As the two signals are theoretically independent, it should be possible to have a background color and simply vary

In practice the color and luminance signal are mixed together, then sent
to the TV where they are decoded. As the luminance is the primary sig-
nal, when it changes it also changes the color phase shift. If the lumi-
nance changes on a half color clock boundary, it will make the color
change at that point. If the luminance were to change on half color
clock boundaries then two false color, or artifact type pixels would be
generated.

The two listings below show uncontrolled artifacting which can
produce some nice effects to otherwise flat artwork.

```
10 GRAPHICS 8+16:POKE 710,0:COLOR 1
20 A=2:B=2:X=79:Y=40:PLOT X,Y
30 FOR Z=1 TO 40
40 IF X<319-A THEN X=X+A
50 GOSUB 80:GOTO 90
60 GOSUB 70:GOSUB 80:GOTO 90
70 DRAWTO X,Y:DRAWTO 319-X,Y:DRAWTO X,191-Y:DRAWTO 319-X,191-Y:RETURN
80 DRAWTO X,Y:DRAWTO X,191-Y:DRAWTO 319-X,Y:DRAWTO 319-X,191-Y:RETURN
90 NEXT Z:FOR T=1 TO 1500:NEXT T
100 GOTO 10
```

```
10 GRAPHICS 8:POKE 710,0:POKE 709,14
20 COLOR 1
30 FOR C=20 TO 10 STEP -2
40 FOR L=0 TO 125:A=A+0.05
50 X=SIN(A)*C:Y=COS(A)*C
60 PLOT X+160,Y+100:NEXT L:NEXT C
70 FOR X=5 TO 300 STEP 1.8
80 PLOT X,5:DRAWTO X,75:NEXT X
90 FOR X=5 TO 300 STEP 2
100 PLOT X,100:DRAWTO X,150:NEXT X
```

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# NEW  MEMBERS

Volkhart Ammerlahn,  Nth Bondi
Peter Bamford,  Umina
Ron Baxter,  Drummoyne
Peter Dukes,  Kogarah
Garry Francis,  Earlwood
David Johnson,  Gymea
Bernhard Kirschner,  East Killara
John Massara,  Five Dock
David Neap,  Kensington
Paul Phillips,  St. Ives
Andrew Raphael,  Chatswood
Brenton Vettoretti,  Croydon
Robert Vickery,  Kensington
Barry Williams,  Frenchs Forest
Michael Wright,  East Lindfield

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# LOTTO SELECTOR

## by Garry Francis

Here is a handy little program to help you select your LOTTO numbers each week. It doesn't have any fancy graphics, but it is nicely formatted & could help you win a million dollars.

After entering the program & checking for typing errors, type "RUN". You will be asked how many numbers you need per game & how many games you wish to play. The program checks for certain invalid combinations (e.g. you cannot play less than 4 games on a standard coupon), then prints out your numbers for each game. It will only print 7 games per screen, then pauses to allow you to copy these numbers onto your coupon. Press the space bar (or nearly any key except BREAK) & it will continue with the next screen.

PROGRAMMING NOTES:

The code is fairly straightforward, but there are a couple of useful tricks that you could use in other programs. Pay particular attention to the extensive error checking routines which (I hope) make the program crash proof. In lineS 120 & 135, "POKE 752,1" makes the cursor invisible & "POKE 752,0" turns it back on. In lines 10 & 170, "? CHR$(253)" causes the buzzer to sound. In lines 135 & 1000, "? CHR$(125)" clears the screen.

The guts of the program is at lines 1010 to 1020. Line 1010 initialises the array A. Line 1020 selects the random numbers using a very efficient shuffling routine. If you can understand how it works, then you'll be able to modify it to shuffle cards & mix up numbers in games programs.

The routine from lines 1030 to 1050 is useful in many situations where the program must pause to allow the user to read the screen. Memory location 764 contains the hardware code of the last key pressed. This is different to the ATASCII code. POKE 764,255 stores a null character in this location. When a key is pressed, the value in location 764 will no longer be 255 & the program may continue.

Good luck! (And if you DO win LOTTO from using this program, then remember the poor, destitute programmer that supplied it!)

```
1 REM ###############################
2 REM #      LOTTO SELECTOR        #
3 REM #      by Garry Francis      #
4 REM # Published by Atari Computer #
5 REM #      Enthusiasts (N.S.W.)   #
6 REM #          June 1982          #
7 REM ###############################
10 GRAPHICS 0:DIM A(40),A$(25),B$(17),YN$(1):A$(1,1)=CHR$(253):A$(2)="ILLEGAL ENTRY. YOU MUST "
15 B$="PLEASE TRY AGAIN.":POSITION 13,1:? "LOTTO SELECTOR"
20 ? :? "THIS PROGRAM WILL SELECT RANDOM":? "NUMBERS FOR YOU TO USE ON YOUR NEXT":? "LOTTO COUPON."
29 REM xxx INPUT & ERROR CHECKING xxx
30 ? :? "SELECT HOW MANY NUMBERS PER GAME BY":? "ENTERING:":? "  6 FOR STANDARD GAME"
40 FOR I=7 TO 12:? "  ";I;" FOR SYSTEMS ";I:NEXT I
```

```
50 TRAP 2000:? :? "HOW MANY NUMBERS PER GAME";:INPUT N
60 IF N<6 OR N>12 THEN 2000
70 IF N<>INT(N) THEN 2010
80 MIN=1:IF N=6 THEN MIN=4
90 TRAP 2020:? :? "HOW MANY GAMES DO YOU WISH TO PLAY";:INPUT G
100 IF G<MIN THEN 2020
110 IF G<>INT(G) THEN 2030
115 IF N=6 AND G/2<>INT(G/2) THEN 2040
119 REM *** SCREEN FORMATTING *** .
120 POKE 752,1:TRAP 40000:WHOLE=INT(G/7):IF WHOLE>0 THEN LINES=7:FOR I=0 TO WHOLE-1:GOSUB 1000:NEXT I
130 LINES=G-7*WHOLE:IF LINES<>0 THEN I=WHOLE:GOSUB 1000
135 POKE 752,0:? CHR$(125)
140 ? :? "DO YOU WANT ANY MORE NUMBERS (Y/N)";:INPUT YN$
150 IF YN$="Y" THEN 30
160 IF YN$="N" THEN GRAPHICS 0:END
170 ? :? CHR$(253);"PLEASE ANSWER YES OR NO.":GOTO 140
999 REM *** NUMBER SELECTION ***
1000 ? CHR$(125):FOR J=1 TO LINES:? "GAME #";7*I+J;":"
1010 FOR K=1 TO 40:A(K)=K:NEXT K
1020 FOR K=1 TO N:L=INT(RND(0)*(41-K))+K:TEMP=A(K):A(K)=A(L):A(L)=TEMP:? A(K);" ";:NEXT K:? :? :NEXT J
1030 POKE 764,255:POSITION 5,22:? " PRESS SPACE BAR TO CONTINUE "
1040 IF PEEK(764)=255 THEN 1040
1050 POKE 764,255:RETURN
1999 REM *** ERROR MESSAGES ***
2000 ? :? A$;"USE A NUMBER":? "BETWEEN 6 AND 12. ";B$:GOTO 50
2010 ? :? A$;"USE AN":? "INTEGER. ";B$:GOTO 50
2020 ? :? A$;:IF MIN=4 THEN ? "PLAY AT LEAST":? "4 GAMES ON A STANDARD COUPON. ":? B$:GOTO 90
2025 ? "USE A NUMBER":? "NO LESS THAN 1. ";B$:GOTO 90
2030 ? :? A$;"USE AN":? "INTEGER. ";B$:GOTO 90
2040 ? :? A$;"PLAY AN EVEN":? "NUMBER OF GAMES ON A STANDARD COUPON.":? B$:GOTO 90
```

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# Summary of Past Meetings

At the first meeting in March, Paul, Garry, and Brenton outlined the various possibilities that a user group could offer. In the discussion that followed there was general agreement on:
- time and place of monthly meetings
- the subsription rate and joining fee
- that Paul, Garry, and Brenton would continue as a steering committee until the first Annual General Meeting.

There were two ATARI's present which were used to demonstrate software.

The April meeting brought more definite plans for:
- the newsletter
- the software exchange
- the librarian (magazines and books).

There were short talks on software from Atari Computer Enthusiasts in the U.S.A., a newly available light pen for the ATARI, and the "Marvin" game that is now in the software exchange. There was more software on display as well as the new ANTIC magazine.

At the May meeting Garry gave details of correspondence with Atari Computer Enthusiasts in the US, and as a result it was decided to adopt the name Atari Computer Enthusiasts (NSW) for our group. The major part of the meeting was taken up by a thoroughly prepared talk on all aspects of PRINT commands in BASIC. This was mainly at an elementary level although almost everyone learnt something new. As usual there was plenty of software on display.

— Ron Baxter